IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

TERVES, LLC, Plaintiff, vs. YUEYANG AEROSPACE NEW MATERIALS CO., LTD, ECOMETAL, INC., and NICK YUAN Defendants.	)	Case No. 1:19-cv-1611-DCN JUDGE DONALD C. NUGENT

DEFENDANTS ECOMETAL, INC. AND NICK YUAN'S *REDACTED* RESPONSE IN OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION

[UNREDACTED VERSION FILED UNDER SEAL PURSUANT TO COURT ORDER]

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(Collectively referred to as "Ecometal")

TABLE OF CONTENTS

FACTUAL BACKGROUND ……2

I. Terves's Lawsuit and Filing of its PI Motion ……2

II. Ecometal and its Importation of the Accused Products ……3

III. State of the Art of Wrought Dissolvable Magnesium Prior to ……4

IV. The Relationship Between Ecometal and [redacted] ……5

V. Terves Considers Sourcing Dissolvable Magnesium Through Ecometal ……6

VI. The Market for Dissolvable Magnesium and Frac Plugs and Balls ……6

ARGUMENT AND AUTHORITY … ……8

I. Legal Standards For Preliminary Injunctions ……8

II. Terves Cannot Show The Necessary Irreparable Harm To Warrant a PI……8

A. Terves Has Not Shown—And Cannot Show—that the Irreparable Harm it Has Allegedly Suffered was Caused by Ecometal and Not Other Competitors……9

B. Terves Also Fails to Present Any Evidence That There is Any Connection Between the Patented Features and the Demand for the Accused Products ……13

III. Terves Cannot Demonstrate Likelihood Of Success On The Merits ……14

A. Substantial Questions of Invalidity Negate Likelihood of Success ……15

(1) Gupta anticipates and/or renders obvious the Asserted Claims……17

(2) Gupta also anticipates and/or renders obvious the Asserted Claims……17

(3) Several claim terms of claims terms of the '653 Patent are invalid……18

B. Terves's Failure to Demonstrate that Ecometal Infringes Any Claim of the Terves Patents Negates Any Likelihood of Success on the Merits ……18

IV. Even Though The Court Need Not Address The Last Two Factors, They Weigh In Ecometal's Favor ……19

CONCLUSION ……20

TABLE OF AUTHORITIES

Page(s)

Cases

Abbott Laboratories v. Mead Johnson & Co.,
544 F.3d 1341 (Fed. Cir. 2008) 8

Abbott Labs. v. Andrx Pharm., Inc.,
452 F.3d 1331 (Fed. Cir. 2006) 10

Amazon.com, Inc. v. Barnesandnoble.com, Inc.,
239 F.3d 1343 (Fed.Cir.2001) 8, 15, 16

Anton/Bauer, Inc. v. PAG, Ltd.,
329 F.3d 1343 (Fed. Cir. 2003) 15

Apple Inc. v. Samsung Elec. Co., Ltd.,
695 F.3d 1370 (Fed. Cir. 2012) 9, 13

Apple Inc. v. Samsung Elec. Co., *Ltd.*, ("Apple I"),
678 F.3d 1314 (Fed. Cir. 2012) 12

Arendi S.A.R.L. v. Apple Inc.,
832 F.3d 1355 (Fed. Cir. 2016) 17

Automated Merch. Sys., Inc. v. Crane Co.,
357 F. App'x 297 (Fed. Cir. 2009) 10, 12, 13

Bayer AG v. Elan Pharm. Research Corp.,
212 F.3d 1241 (Fed. Cir. 2000) 18

Belden Techs., Inc. v. Superior Essex Commc'ns LP,
802 F. Supp. 2d 555 (D. Del. 2011) 9

Bettcher Indus., Inc. v. Bunzl USA, Inc.,
692 F. Supp. 2d 805 (N.D. Ohio 2010) 15, 16

Capital Sec. Sys., Inc. v. NCR Corp.,
725 F. App'x 952 (Fed. Cir. 2018) 18

Celeritas Techs. Ltd. v. Rockwell Int'l Corp.,
150 F.3d 1354 (Fed. Cir. 1998) 16

Citrix Sys., Inc. v. Workspot, Inc.,
No. 18-588-LPS, 2019 WL 3858602 (D. Del. Aug. 16, 2019) 13, 14

Cole v. Kimberly-Clark Corp.,
102 F.3d 524 (Fed. Cir. 1996) 18

Douglas Dynamics LLC v. Buyers,
717 F.3d 1336 (Fed. Cir. 2013) 20

E.I. DuPont de NeMours & Co. v. Synvina C.V.,
904 F.3d 996 (Fed. Cir. 2018) 17

eBay Inc. v. MercExchange, L.L.C.,
547 U.S. 388 (2006) 8

EcoServices, LLC v. Certified Aviation Servs., LLC,
340 F. Supp. 3d 1004 (C.D. Cal. 2018) 9, 10

Erico Int'l Corp. v. Vutec Corp.,
516 F.3d 1350 (Fed. Cir. 2008) 16

Hybritech, Inc. v. Abbott Labs.,
849 F.2d 1446 (Fed. Cir. 1988) 8

Illinois Tool Works, Inc. v. Grip–Pak, Inc.,
906 F.2d 679 (Fed.Cir.1990) 20

Ineos USA LLC v. Berry Plastics Corp.,
783 F.3d 865 (Fed. Cir. 2015) 17

Intel Corp. v. ULSI Sys. Tech., Inc.,
995 F.2d 1566 (Fed. Cir. 1993) 8

Jack Guttman, Inc. v. Kopykake Enters., Inc.,
302 F.3d 1352 (Fed. Cir. 2002) 8, 20

Jeneric/Pentron, Inc. v. Dillon Co., Inc.,
No. 3:98-CV-818 (EBB), 1999 WL 66537 (D. Conn. February 3, 1999) 20

Lemelson v. Gen. Mills, Inc.,
968 F.2d 1202 (Fed. Cir. 1992) 15

Litton Sys., Inc. v. Sundstrand Corp.,
750 F.2d 952 (Fed. Cir. 1984) 20

Nutrition 21 v. United States,
930 F.2d 867 (Fed. Cir. 1991) 11, 14, 16

Open Text, S.A. v. Box, Inc.,
36 F. Supp. 3d 885 (N.D. Cal. 2014) 20

Power Mosfet Tech., L.L.C. v. Siemens AG,
378 F.3d 1396 (Fed. Cir. 2004) 15

Purdue Pharma L.P. v. Boehringer Ingelheim GmbH,
237 F.3d 1359 (Fed.Cir.2001) 15

SmithKline Diagnostics, Inc. v. Helena Labs. Corp.,
859 F.2d 878 (Fed. Cir. 1988) 15

TeleSign Corp. v. Twilio, Inc.,
No. 15-CV-3240-PSG (SSX), 2015 WL 12532491 (C.D. Cal. Oct. 19, 2015) 10

Tiber Laboratories v. Hawthorn Pharmaceuticals, Inc.,
527 F. Supp. 2d 1373 (N.D. Ga. 2007) 8

Titan Tire Corp. v. Case New Holland, Inc.,
566 F.3d 1372 (Fed. Cir. 2009) 16

Toxco Inc. v. Chu,
724 F. Supp. 2d 16 (D.D.C. 2010) 12

Travel Tags, Inc. v. UV Color, Inc.,
690 F. Supp. 2d 785 (D. Minn. 2010) 9, 11

Trudeau v. Fed. Trade Comm'n,
384 F. Supp. 2d 281 (D.D.C. 2005) 12

Wahpeton Canvas Co. v. Frontier, Inc.,
870 F.2d 1546 (Fed. Cir. 1989) 18, 19

Statutes

35 U.S.C. § 102 16
35 U.S.C. § 102(a) 5
35 U.S.C. § 103 16

Terves's request for the drastic remedy of preliminary injunctive relief must be denied for several reasons. ***First***, Terves's own evidence undercuts its claim that Ecometal's alleged infringement is causing irreparable harm. Terves has presented no reliable evidence to support its claims that its alleged irreparable harm has been caused by Ecometal. In fact, Terves's evidence actually chronicles the departure of several customers and those customers' return as Terves's primary competition for dissolvable frac plug customers. If anything, it is competition from Terves's ex-customers that put Terves in the awful shape it allegedly finds itself. Yet, for some reason, Terves elected instead to sue Ecometal, an exceptionally small player, especially when compared to the Halliburtons, Innovexes, Baker Hughes, and Schlumbergers of the world.

The evidence submitted by Ecometal demonstrates that it sells to only one customer in the United States who, in turn, provides magnesium frac balls and frac plugs to only one end user. That one end user has never been a customer of Terves, nor has that single end user even been identified by Terves as a prospective customer. Even if the Court assumes that Ecometal or its customer "stole" that single end user from Terves, the amount of business implicated is so small compared with Terves's real competitors that this Motion wholly fails to establish the necessary "causal nexus" between Ecometal's alleged infringement and the irreparable harm purportedly being experienced by Terves. On that basis alone, the Court should deny Terves's motion.

Second, even if Terves could show pertinent irreparable harm, it cannot show that it is likely to succeed on its infringement claim. There are substantial questions of patentability with respect to the '653 Patent based on three independent infirmities: anticipation, obviousness, and indefiniteness. Ecometal presents in this Response multiple alternative bases for anticipation and obviousness. Ecometal also presents multiple reasons why a person of ordinary skill in the art would have found the Asserted Claims indefinite at the time of the invention (*i.e.*, April 2014).

Third, even if the Court finds Ecometal has not raised a substantial question of patentability, it is hard to ignore Terves's failure to establish that Ecometal's Accused Products meet each and every limitation of any one of the asserted patent claims. In particular, Terves fails to show the presence in Ecometal's products of at least two claim limitations: "galvanically-active intermetallic phases" and "said additive having a greater melting point temperature than a solidus temperature of said magnesium." Thus, Terves's Motion must be denied because it is not likely to succeed on its claims of patent infringement.

Fourth, because of Terves's failure with respect to either (and perhaps even both) of the first two prongs of the preliminary injunction analysis, the Court need not examine the final two factors: the balance of harms weighs and public interest. But, even if it does, both of those factors similarly weigh in Ecometal's favor. Competition always serves the public interest, and thus, allowing competition is favored, and weighs against the grant of a PI.

FACTUAL BACKGROUND

I. Terves's Lawsuit and Filing of its PI Motion

Terves commenced this action in July 2019, bringing claims against Ecometal, Inc., its principal Mr. Yuan, and an unrelated third party, Yueyang Aerospace New Materials Co. Ltd.,[1] for infringement of U.S. Patent Nos. 9,903,010 and 10,329,653. [Dkt. No. 1]. Three months after receiving samples of Ecometal's dissolvable magnesium alloys, Terves filed this PI Motion [Dkt. No. 29] seeking the drastic remedy of preliminarily enjoining Ecometal from "making, using, selling, offering for sale, or importing into the U.S." seven of its ten "grades" of magnesium alloy

[1] Despite Terves repeatedly being informed that Mr. Yuan and Ecometal have no affiliation or connection with Yueyang Aerospace New Materials Co. Ltd., Terves states in its PI Motion that "Defendant Yueyang is a Chinese company from which Ecometal buys infringing material." [Dkt. No. 30 at p. 1]. This statement is patently false because Ecometal does not buy material from this company, nor is any of the material that Ecometal buys from any supplier infringing. Ex. 1, Yuan Decl. at ¶¶ 16–19.

produced for testing ("the Accused Products"). [Dkt. No. 29-12]. Terves also requests all those "in active concert" with Ecometal, i.e. its lone customer, Magnesium Machine, LLC ("MMP") also be enjoined. *Id.* Terves asserts that the following claims of the '653 Patent (Ex. 2) are infringed:

Ecometal Magnesium Alloy Grade	Asserted Claims of '653 Patent
AJM006	1, 4, 45, 46, 47, 49, 52, 54, 61, 69
AJM010	1, 4, 49, 52, 61, 69
AJM012	1, 4, 45, 46, 47, 49, 52, 54, 61, 69
AJM016	1, 4, 45, 46, 47, 49, 52, 61, 69
AJM017	1, 4, 49, 52, 61, 69
AJM018	1, 4, 45, 46, 47, 49, 52, 54, 61, 69
AJM023	1, 4, 45, 46, 47, 49, 52, 54, 61, 69

Dkt. No. 30-2 at p. 3; Dkt. No. 31-1 at p. 11. As support for these infringement positions, Terves relies entirely on the Declaration of Dr. Lee A. Swanger, a sealed version of which has been lodged by Terves as Dkt. No. 30-2. Ecometal addresses Dr. Swanger's Declaration, *infra*, and through the evidence and opinion testimony contained in the Medlin PI Decl, filed concurrently herewith.

II. Ecometal and its Importation of the Accused Products

Ecometal is a Canadian company formed in 2010 for the purposes of sourcing lightweight metals, functional alloys, ultra-strong alloys, rare earth metals, and master alloys for use in aircrafts, metallurgies, automobiles, mechanical and medical industries. Ex. 1, Yuan Decl. at ¶ 2. Its principal, Mr. Yuan, received a master's degree in 1988 from Shanghai Jiao Tong University, focusing on the study of material protection, especially sacrificed anodes (aluminum, magnesium and zinc alloys). *Id.* at ¶ 3. Prior to forming Ecometal, Mr. Yuan worked as a sales consultant for Chinese companies for sourcing various metals. *Id.* at ¶ 4.

One of Mr. Yuan's specific purposes for founding Ecometal Inc. was to purchase master alloys in China and sell them in North America. *Id.* at ¶ 5. A "master alloy" is an alloy containing two, three, or more elements, with a defined composition. *Id.* at 6. In late 2012, a Chinese customer

asked Ecometal to source dissolving materials for frac balls. *Id.* at ¶ 10. Ecometal first sourced a polymer material, but then, in early 2013, switched its focus to dissolvable magnesium. *Id.* at ¶ 11.

Ecometal works only as a trader in the Accused Products, meaning it does produce or manufacture the Accused Products. *Id.* at ¶ 12. [redacted] Mr. Yuan has visited the [redacted] on multiple occasions and has personal knowledge of the processes by which the Accused Products are cast. *Id.* at ¶ 17. Mr. Yuan was recently able to obtain a copy of the process specifications from [redacted] for the Accused Products, which confirmed Mr. Yuan's personal observations of the processes. *Id.* at ¶ 18. [redacted] is significant technologically and with respect to the claims of the Terves '653 Patent. *See*, *infra*, and the Medlin PI Decl., filed concurrently herewith.

III. State of the Art of Wrought Dissolvable Magnesium Prior to 2014

As early as 2010—and certainly no later than the end of 2013—cast magnesium foundries, particularly in China, were producing wrought dissolvable magnesium. Ex. 1, Yuan Decl. at ¶ 7. Ecometal's supplier began selling master alloys no later than December 6, 2010, specifically for the purpose introducing corrosive elements such as nickel and copper into magnesium alloys in order to facilitate dissolution of those alloys. *Id.* at ¶ 8. In addition to Mr. Yuan's own experience, evidence of this process is also captured in Chinese Patent Publication No. 103343271 ("Xiao"), filed with Chinese Patent Office on July 8, 2013, and published internationally on October 9,

2013.[2] Xiao is prior art to the '653 Patent under 35 U.S.C. § 102(a). In fact, during prosecution of the '653 Patent, Terves submitted the Chinese-language publication of Xiao with an English translation of the Xiao abstract (*See,* Ex. 5 at ECOMETAL-2309–2317) to the U.S. Patent Office.

Xiao discloses a "fast-decomposed cast magnesium alloy" where "elements such as Fe [iron], Cu [copper], Ni [nickel], Ag [silver], etc. in the magnesium alloy can form a large number of intermetallic composite micro-particles, which can improve the corrosion performance of the magnesium alloy" that "can be used as a tripping ball material for a multi-stage sliding sleeve staged-fracturing technique" and "the decomposition rate at 93°C in a 3% KCl solution is 50 to 200 times of that of the existing AZ91D magnesium alloy." *Id.* at ¶¶ 0001 and 0026.

More than a decade before Xiao's publication, it was already known in the art that adding elements such as copper and nickel to magnesium would result in the formation of intermetallic particles. *See, e.g.,* Ex. 6, S.F. Hassan and Gupta, M., "Development of high strength magnesium based composites using elemental nickel particulates as reinforcement," *Journal of Materials Science* 37, 2467–2474 (2002) ("Gupta") and Ex. 7, K.F. Ho, M. Gupta, and T.S. Srivatsan, "The mechanical behavior of magnesium alloy AZ91 reinforced with fine copper particulates," *Materials Science and Engineering* A369, 302–308 (2004) ("Ho"). Thus, while the idea of adding certain elements to magnesium to create a fast-decomposing magnesium composite product was new to Terves in 2014, it was not new in the metallurgical art.

IV. The Relationship Between Ecometal [redacted]

[redacted]

[2] A true and correct of Xiao is attached hereto as Ex. 3. A certified English translation of Xiao is also attached hereto as Ex. 4.

[redacted]

V. Terves Considers Sourcing Dissolvable Magnesium Through Ecometal

Terves has been aware that Ecometal is in the dissolvable magnesium business since at least 2015. Ex. 9, at ¶. In fact, Terves inquired with Ecometal about the potential of supplying dissolvable magnesium in Summer 2015, even acquiring a sample for testing. *Id.* No commercial relationship was established at that time between Terves and Ecometal. Terves approached Mr. Yuan again in 2018 regarding the potential supply of dissolvable magnesium, after hiring Steven Barela. Ex. 10. Mr. Barela and Mr. Yuan's relationship dates back to 2013, well before Mr. Barela ever worked with Terves. Ex. 11, ECOMETAL-5398–5405. In fact, they traveled to China together on multiple occasions, before Terves had even applied for its patent, and visited facilities that were then producing wrought dissolvable magnesium. *Id.* at ECOMETAL-5533–5548.

VI. Market for Dissolvable Magnesium and Frac Plugs and Balls

Terves's PI Motion and supporting Sherman Declaration establish that the loss of major oil services customers Halliburton, Steelhaus, and Schlumberger, as well as those ex-customer's sourcing dissolvable magnesium through non-Ecometal sources, is what has caused Terves's harm,

if any. [redacted] If anything, Terves has severely underestimated the total size of the dissolvable magnesium frac plug market and, therefore, significantly overstates Ecometal's share of that market. *See, e.g.* Ex. 14, Bloomberg Article, estimating dissolvable frac plug market

to be $1.2 Billion in 2019. Even at Terves's understated numbers, Ecometal is still a very small player in the dissolvable magnesium landscape.

ARGUMENT AND AUTHORITY

I. LEGAL STANDARDS FOR PRELIMINARY INJUNCTIONS

The grant of a PI is a "drastic and extraordinary remedy that is not to be routinely granted," *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed. Cir. 1993), for which the moving party must demonstrate: (1) a likelihood of success on the merits, (2) irreparable harm if the preliminary injunction is not granted, (3) a balance of hardship between the parties, and (4) the injunction's favorable impact on the public interest. *See*, *Jack Guttman, Inc. v. Kopykake Enters., Inc.*, 302 F.3d 1352, 1356 (Fed. Cir. 2002). None of these factors is dispositive, but a movant is not entitled to a preliminary injunction if it fails to demonstrate *both* a likelihood of success *and* irreparable harm. *See Hybritech, Inc. v. Abbott Labs.*, 849 F.2d 1446, 1451 (Fed. Cir. 1988). *See also Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed.Cir.2001).

II. TERVES CANNOT SHOW THE NECESSARY IRREPARABLE HARM TO WARRANT A PI

In order to obtain a PI, Terves must prove it would be irreparably harmed absent such relief. *See eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006) (abolishing the long-standing presumption of irreparable harm in patent cases); *Tiber Laboratories v. Hawthorn Pharmaceuticals, Inc.*, 527 F. Supp. 2d 1373, 1380 (N.D. Ga. 2007) (*eBay* abolished presumption of irreparable harm at the PI stage). In other words, Terves must establish that money damages for Ecometal's purported infringement cannot make it whole in order to obtain injunctive relief. *Abbott Laboratories v. Mead Johnson & Co.*, 544 F.3d 1341, 1366 (Fed. Cir. 2008). Terves cannot show that Ecometal's purported infringement has caused it irreparable harm.

A. Terves Has Not Shown—And Cannot Show—that the Irreparable Harm it Has Allegedly Suffered was Caused by Ecometal and Not Other Competitors

Terves alleges—without providing any real evidence—because of Ecometal's alleged infringement, it has experienced loss of market share, price erosion, risk of loss of customers, death of patent owner's business, judgment-proof defendant, unquantifiable reputational harm, and competing against infringer. [Dkt. No. 30 at pp. 11–18]. Terves's accusations for each of these types of harms are unfounded for the same fundamental reason: Terves has failed to present anything other than conclusory assertions that "a sufficiently strong causal nexus relates the alleged harm to the alleged infringement." *Apple Inc. v. Samsung Elec. Co., Ltd.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012) ("*Apple II*"). This "causal nexus requirement ensures that an injunction is only entered against a defendant on account of a harm resulting from ***the defendant's wrongful conduct***, ***not some other reason***." *Apple Inc. v. Samsung Elec. Co., Ltd.*, 809 F.3d 633, 640 (Fed. Cir. 2015) ("*Apple IV*") (emphasis added). The question is not whether there is some causal relationship between the asserted injury and the infringing conduct, but to what extent the harm resulting from the accused product can be ascribed to the infringement. *Apple II*, 695 F. 3d at 1375.

Based on documents produced by Ecometal and Mr. Sherman's declaration and deposition testimony, Terves and Ecometal are not the only competitors in the market and, indeed, establish that Ecometal is just a small player in that market. Yet, Terves's PI Motion seeks to lay all the harm Terves's claims to have experienced at the feet of Ecometal. This alone disfavors a finding of irreparable harm. *EcoServices, LLC v. Certified Aviation Servs., LLC*, 340 F. Supp. 3d 1004, 1024–25 (C.D. Cal. 2018). *See also Belden Techs., Inc. v. Superior Essex Commc'ns LP*, 802 F. Supp. 2d 555, 577 (D. Del. 2011) (no irreparable harm where "plaintiffs and defendants are not the only competitors in [a] multi-supplier market"); and *Travel Tags, Inc. v. UV Color, Inc.*, 690 F. Supp. 2d 785, 800 (D. Minn. 2010) (refusing to find irreparable harm because the patentee's

"conclusory, unsupported statements" that its loss in sales and profit were attributable to the accused infringer "ignoring the potential effects on [the patentee] of other competitors").

Even if those other competitors are using non-infringing dissolvable magnesiums (which Mr. Sherman claims would be impossible, Dkt. No. 30-1 at ¶ 38 ("the market consists of Terves and infringers")), Terves's failure to account for the effect of those other infringing competitors is also fatal to Terves's "causal nexus" requirements, as courts have discounted evidence presented by self-serving employees of the patentee, particularly where the evidence "fails to adequately differentiate between harm arising from the sale of infringing products and harm arising generally from competition with [the defendant]." *TeleSign Corp. v. Twilio, Inc.*, No. 15-CV-3240-PSG (SSX), 2015 WL 12532491, at *6 (C.D. Cal. Oct. 19, 2015).

Terves's failure to identify any customers it lost to Ecometal [redacted], also defeats its claims of irreparable harm. *EcoServices,* 340 F. Supp. 3d at 1024 ("[b]ecause Plaintiff has lost customers to competitors other than Defendant, this does not favor a finding or irreparable harm"). To the extent Terves's claims of irreparable harm are based on the possibility that it will lose customers to Ecometal in the future, evidence of potential lost sales alone does not demonstrate irreparable harm. *See Abbott Labs. v. Andrx Pharm., Inc.*, 452 F.3d 1331, 1348 (Fed. Cir. 2006). In any event, Terves has presented no evidence that is even a possibility. [redacted] This type of speculative harm as the basis for irreparable harm has been roundly rejected. *See, e.g., Automated Merch. Sys., Inc. v. Crane Co.*, 357 F. App'x 297, 301 (Fed.

Cir. 2009) ("granting preliminary injunctions on the basis of speculative loss of market share would result in granting preliminary injunctions 'in every case where the patentee practices the invention'") (quoting *Nutrition 21 v. United States*, 930 F.2d 867, 871 (Fed. Cir. 1991)).

Despite Terves's acknowledgment that its loss of customers is attributable to other suppliers, Terves seeks to hold Ecometal accountable for the harm it has experienced and even goes so far to state: "if Ecometal's infringement continues, Terves will almost certainly go out of business due to lost customers, reduced revenues/market-share, and price erosion." [Dkt. No. 30 at p. 14; Dkt. No. 30-1 at ¶¶ 36, 48–50]. Terves makes this dire prediction without providing any evidence that actually links Ecometal's alleged infringement to Terves's current situation. [redacted] This evidence makes it impossible for Terves to establish the required "causal link" between Ecometal and the harm it is purportedly suffering.

Just as with the other alleged forms of irreparable harm, Terves wholly fails to establish that any drop in price it is experiencing has been caused by Ecometal's alleged infringement. [redacted] without a scintilla of evidence that Ecometal is responsible for a drop of water, let alone the entire flood. Like Terves's other accusations of irreparable harm, its price erosion theory fails because its evidence on price erosion is deficient—if not entirely absent. *Travel Tags*, 690 F. Supp. 2d at 800

(dismissing price erosion theory because of lack of support to support assumption that accused infringer was solely responsible for drop in prices). Similarly, Terves has not provided anything other than assumptions and conclusory statements about what Terves calls "reputational harm." *See* Dkt. No. 30 at p. 17. Terves makes these wholly unsupported leaps without even attempting to provide any evidence other than the self-serving statements of Mr. Sherman. While reputational harm can be used to establish the requisite irreparable harm, "the showing … must be concrete and corroborated, not merely speculative." *Toxco Inc. v. Chu*, 724 F. Supp. 2d 16, 30 (D.D.C. 2010) (citing *Trudeau v. Fed. Trade Comm'n*, 384 F. Supp. 2d 281, 297 (D.D.C. 2005). Terves has not come close to chinning that bar. Even if Terves is able to demonstrate the "causal link" between its complained-of irreparable harm and Ecometal's alleged infringement, Ecometal's small amount of sales weighs heavily against a finding of irreparable harm. *Apple Inc. v. Samsung Elec. Co., Ltd.*, ("*Apple I*"), 678 F.3d 1314, 1324–25 (Fed. Cir. 2012) ("A mere showing that [plaintiff] might lose some insubstantial market share as a result of Samsung's infringement is not enough").

Through its moving papers, supporting documents, and depositions of company personnel, Terves has yet to identify a former, actual, or prospective customer or sale that Terves has actually lost to Ecometal. The best it can muster is that Ecometal "might be" selling to a customer to which Terves could potentially sell. Terves's accusations that Ecometal have caused Terves the harm it claims to be experiencing rest solely on Terves's belief the Accused Ecometal Products infringe, not that Terves has ever actually lost any business as a result of Ecometal. Such speculative accusations of irreparable harm are not enough to support an injunction because the law is clear that, even if firmly established, infringement alone is not enough. *Automated Merch. Sys., Inc. v. Crane Co.*, 357 F. App'x 297, 301 (Fed. Cir. 2009). Otherwise, every accused infringer would be susceptible to a preliminary injunction. *Id.*

B. Terves Also Fails to Present Any Evidence That There is Any Connection Between the Patented Features and the Demand for the Accused Products

To satisfy the causal nexus requirement, a patentee must also show that there is "some connection" between the patented feature and the demand for the infringing product." *Id*. at 642. In other words, the patentee must present evidence that the patented feature "impact[s] consumers' decision to purchase the accused" product. *Id.* A patentee may satisfy that requirement by showing "that the infringing feature drives consumer demand for the accused product." *Apple II*, 695 F.3d at 1375. As with Terves's failure to support its accusations that Ecometal, not some other competitor, have caused its alleged irreparable harm, Terves has presented no evidence that the patented features of the invention drive consumer demand for the product. Terves does not even present conclusory statements or arguments that this is the case. *See., e.g. Citrix Sys., Inc. v. Workspot, Inc.*, No. 18-588-LPS, 2019 WL 3858602, at *5 (D. Del. Aug. 16, 2019) (patentee failed to establish "causal nexus" where it only tied touted features to specific claim limitations, not whole claims, and further failed to tie any of the features for customer demand of the accused infringer's products).

Even if Terves had tried to present evidence that the patented features drive demand for the Accused Products, it would likely have failed in doing so. Terves was made aware—while prosecuting its own Chinese patent application based on the subject matter of the '653 Patent—that the increased dissolution rate disclosed in Terves's patent specification was already disclosed by the prior art Xiao patent. Ex. 4, Xiao at ¶¶ 64; and Ex. 16, First Chinese Office Action at p. 10. As a result, Terves's purported invention must lie in the particularly claimed composition, which is precisely what Terves argued to Chinese Patent Office in distinguishing over the Xiao patent. Exs. 17 and 18, Terves's Response to First Office Action and Certified Translation. Specifically, Terves argued to the Chinese Patent Office that, unlike Xiao, its invention requires that the additive

materials are added at a temperature above the melting point of the magnesium or magnesium alloy but below the melting point or liquidus of the additive to ensure that not all of the additive dissolves into the magnesium. *Id.*

This is not the only way to produce market-desirable dissolvable magnesium. In fact, as set forth in the Yuan Decl., [redacted] This ensures that those master alloys fully dissolve into the molten magnesium or magnesium alloys. *Id.* This is the exact opposite of Terves's patented invention. Thus, there is no evidence the patented or novel features of the '653 Patent, if any, drive the demand for the infringing feature because those so-called patented features are completely absent from the Accused Ecometal Products. [redacted] Thus, yet again, Terves has failed to show the necessary causal connection between the alleged infringement and its alleged irreparable harm.

III. TERVES CANNOT DEMONSTRATE LIKELIHOOD OF SUCCESS ON THE MERITS

Terves is also not entitled to a PI because it cannot succeed on the merits. "[A]t the preliminary injunction stage, because of the extraordinary nature of the relief, the patentee carries the burden of showing likelihood of success on the merits with respect to the patent's validity, enforceability, and infringement." *Nutrition 21*, 930 F.2d at 869 (Fed. Cir. 1991) (emphasis original). In order to establish a reasonable likelihood of success, Terves must demonstrate, in light

of the presumptions and burdens that will inhere at trial, both that it will likely prove infringement and that its infringement claim will likely withstand any challenges to the patent's validity and enforceability. *Anton/Bauer, Inc. v. PAG, Ltd.*, 329 F.3d 1343, 1348 (Fed. Cir. 2003) (noting that the plaintiff must establish that any challenges "lack substantial merit") (citing *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1363 (Fed.Cir.2001)); *Amazon.com*, 239 F.3d at 1350–51. Here, if Ecometal raises "a substantial question concerning either infringement or validity, ... the preliminary injunction should not issue." *Bettcher Indus., Inc. v. Bunzl USA, Inc.*, 692 F. Supp. 2d 805, 816 (N.D. Ohio 2010) (quoting *Amazon.com*, 239 F.3d at 1350–51).

A. Substantial Questions of Invalidity Negate Likelihood of Success

Conceptually, the first step of an invalidity analysis based on anticipation and/or obviousness in view of prior art references is not different from that of an infringement analysis. *Amazon.com*, 239 F.3d at 1351. "It is elementary in patent law that, in determining whether a patent is valid and, if valid, infringed, the first step is to determine the meaning and scope of each claim in suit." *Lemelson v. Gen. Mills, Inc.*, 968 F.2d 1202, 1206 (Fed. Cir. 1992). A court must first construe a claim before determining its validity, just as if it first construed before deciding infringement. *Power Mosfet Tech., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1406 (Fed. Cir. 2004). Only when a claim has properly understood can a determination be made whether the claim "reads on" an accused device or method, or whether the prior art anticipates and/or renders obvious the claimed invention." *Id.* Because the claims of a patent measure the invention at issue, the claims must be interpreted and given the same meaning for purposes of both validity and infringement analyses. *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 882 (Fed. Cir. 1988).

Because the Court has not yet construed the claims (the parties only recently submitted opening claim construction briefs), ***solely for the purposes of this PI Motion***, Ecometal applies

Terves's final proposed claim constructions [Dkt. No. 37-13] for its prior-art-based invalidity and non-infringement analyses (without waiving, conceding, or abandoning Ecometal's positions briefed in its opening and responsive claim construction briefs, particularly those positions directed to indefiniteness of the claim terms at issue incorporated, *supra*.)

There are a number of "substantial questions" concerning the validity of the presently asserted claims of the '653 Patent, and as such, Terves's request for a preliminary injunction must be denied. *See Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1378-79 (Fed. Cir. 2009). This "substantial question" showing requires less proof than the clear and convincing standard required to prove invalidity at trial. *Erico Int'l Corp. v. Vutec Corp.*, 516 F.3d 1350, 1356 (Fed. Cir. 2008). The Federal Circuit has explained that '[i]n resisting a preliminary injunction . . . one need not make out a case of actual invalidity. ***Vulnerability*** is the issue at the preliminary injunction stage, while validity is the issue at trial." *Amazon.com*, 239 F.3d at 1359 (emphasis added). To overcome Ecometal's arguments for purposes of this PI Motion, Terves is required to present a "***clear case*** supporting the validity of the patent in suit." *Bettcher*, 692 F. Supp. 2d at 819 (citing *Nutrition 21 v. United States*, 930 F.2d 867, 871 (Fed. Cir. 1991)).

A patent claim is invalid as anticipated (35 U.S.C. § 102) where "each and every limitation is found either expressly or inherently in a single prior art reference." *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998). A patent claim is invalid as obvious "if the differences between the subject matter sought to be patented and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103. "A patent can be obvious in light of a single prior art reference if it

would have been obvious to modify that reference to arrive at the patented invention." *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

(1) Gupta anticipates and/or renders obvious the Asserted Claims

Noted, *supra*, prior art Xiao, discloses a "fast-decomposed cast magnesium alloy" where "elements such as Fe [iron], Cu [copper], Ni [nickel], Ag [silver],[3] etc. in the magnesium alloy can form a large number of intermetallic composite micro-particles, which can improve the corrosion performance of the magnesium alloy" that "can be used as a tripping ball material for a multi-stage sliding sleeve staged-fracturing technique" and "the decomposition rate at 93°C in a 3% KCl solution is 50 to 200 times of that of the existing AZ91D magnesium alloy," Ex. 4 at ¶¶ 0001 and 0026. As such, Xiao discloses each and every element of the Asserted Claims of the '653 Patent (i.e. anticipates) under any claim construction—but most particularly Terves's proposed construction. To the extent there is any concern as to whether all the claim elements are disclosed by Xiao, it would still render the Asserted Claims of the '653 Patent obvious. A charting of the specific claim limitations of the Asserted Claims of the '653 Patent compared against disclosures in Xiao is included in the Medlin PI Decl., filed concurrently herewith.

(2) Gupta also anticipates and/or renders obvious the Asserted Claims

Even though there should be no doubt that Xiao invalidates the asserted claims of the '653 Patent, let alone presents a substantial question of patentability, it is worth noting that, over a decade before Xiao's publication date, Gupta, Ex. 6 hereto, established that it was well-known in the art that adding elements such as copper and nickel to magnesium would result in the formation

[3] Application of the prior art to the Asserted Claims implicates the concept of "overlapping ranges." A prior art reference that discloses an overlapping but different range than the claimed range can be anticipatory, even where the prior art range only partially or slightly overlaps with the claimed range. *See Ineos USA LLC v. Berry Plastics Corp.*, 783 F.3d 865, 870-71 (Fed. Cir. 2015). Where there is a range disclosed in the prior art, and the claimed invention falls in that the range, the patentee bears the burden of production to come forward with evidence of criticality. *E.I. DuPont de NeMours & Co. v. Synvina C.V.*, 904 F.3d 996, 1008 (Fed. Cir. 2018).

of intermetallic particles. A charting demonstrating Gupta's disclosures of each and every element of the Asserted Claims of the '653 Patent is included in the Medlin PI Decl

(3) Several claim terms of claims terms of the '653 Patent are invalid

There are several claim terms that are indefinite because they have no plain and ordinary meaning, and nothing in the intrinsic record offers any reasonably certain meaning or objective boundaries for the terms. When a term "has no commonly-accepted definition and its scope is unclear in view of the intrinsic evidence" that term is indefinite. *Capital Sec. Sys., Inc. v. NCR Corp.*, 725 F. App'x 952, 959 (Fed. Cir. 2018). Ecometal here incorporates the indefiniteness positions presented in the April 10, 2020 Declaration of Dr. J. Medlin, attached hereto as Ex. 20.

B. Terves's Failure to Demonstrate that Ecometal Infringes Any Claim of the Terves Patents Negates Any Likelihood of Success on the Merits

A finding of literal infringement requires that each and every element of the asserted claim, properly construed, is met by the accused product. *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 532 (Fed. Cir. 1996). If any limitation is absent, there is no literal infringement as a matter of law. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If the accused product does not infringe an independent claim, it also does not infringe any claim depending therefrom. *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989).

[redacted]

[redacted] Dr. Swanger's failure to address this claim element is also dispositive of his infringement analysis. A detailed discussion for why the Swanger Declaration fails to demonstrate that Terves is likely to succeed on its infringement claims against Ecometal (even under Terves's proposed claim construction) is included in the Medlin PI Declaration.

IV. EVEN THOUGH THE COURT NEED NOT ADDRESS THE LAST TWO FACTORS, THEY WEIGH IN ECOMETAL'S FAVOR

A court is not required to make findings regarding the balance of hardships or the public interest where a plaintiff has not demonstrated both a likelihood of success and irreparable harm.

See Kopykake, 302 F.3d at 1356. Because Terves has failed to demonstrate at least one if not both of these requirements, the Court need go no further. If the Court decides to consider these factors, anyway, it will find that they provide further evidence why a preliminary injunction should not issue in this case. "An injunction should not be granted if its impact on the enjoined party would be more severe than the injury the moving party would suffer if it is not granted." *Litton Sys., Inc. v. Sundstrand Corp.*, 750 F.2d 952, 959-61 (Fed. Cir. 1984). A preliminary injunction is a drastic remedy and the hardship on a preliminarily enjoined party who is required to withdraw its product from the market before trial can be devastating. See *Illinois Tool Works, Inc. v. Grip–Pak, Inc.*, 906 F.2d 679, 683 (Fed.Cir.1990). Moreover, the balance of hardships tips in favor of the accused infringer when it has raised a substantial question of patent validity, as Ecometal has done here, and the patentee's showing of irreparable harm is speculative, as Terves's is here. *See Open Text, S.A. v. Box, Inc.*, 36 F. Supp. 3d 885, 911 (N.D. Cal. 2014).

Similar to the balance of hardships, the public interest factor weighs in favor of the accused infringer when the patentee makes a weak showing of likelihood of success. *See, e.g.*, *Dillon Jeneric/Pentron, Inc. v. Dillon Co., Inc.*, No. 3:98-CV-818 (EBB), 1999 WL 66537, at *14 (D. Conn. February 3, 1999), aff'd, 205 F.3d 1377 (Fed.Cir.2000). Moreover, competition best serves the public interest. *Douglas Dynamics LLC v. Buyers*, 717 F.3d 1336, 1346 (Fed. Cir. 2013). The evidence of record establishes that, whether Terves likes it or not, the dissolvable magnesium industry is rife with competition. Thus, the public interest favors the denial of the PI Motion.

CONCLUSION

Accordingly, Terves's Motion for Preliminary should be denied.

Dated: July 2, 2020

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on July 2, 2020, I electronically transmitted the foregoing document to the Clerk of the Court using the ECF system for filing and transmittal of a Notice of Electronic Filing to the following ECF registrants:

Matthew J. Cavanaugh
David B. Cupar
Andrew Gordon-Seifert

/s/ *Evan W. Talley*
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